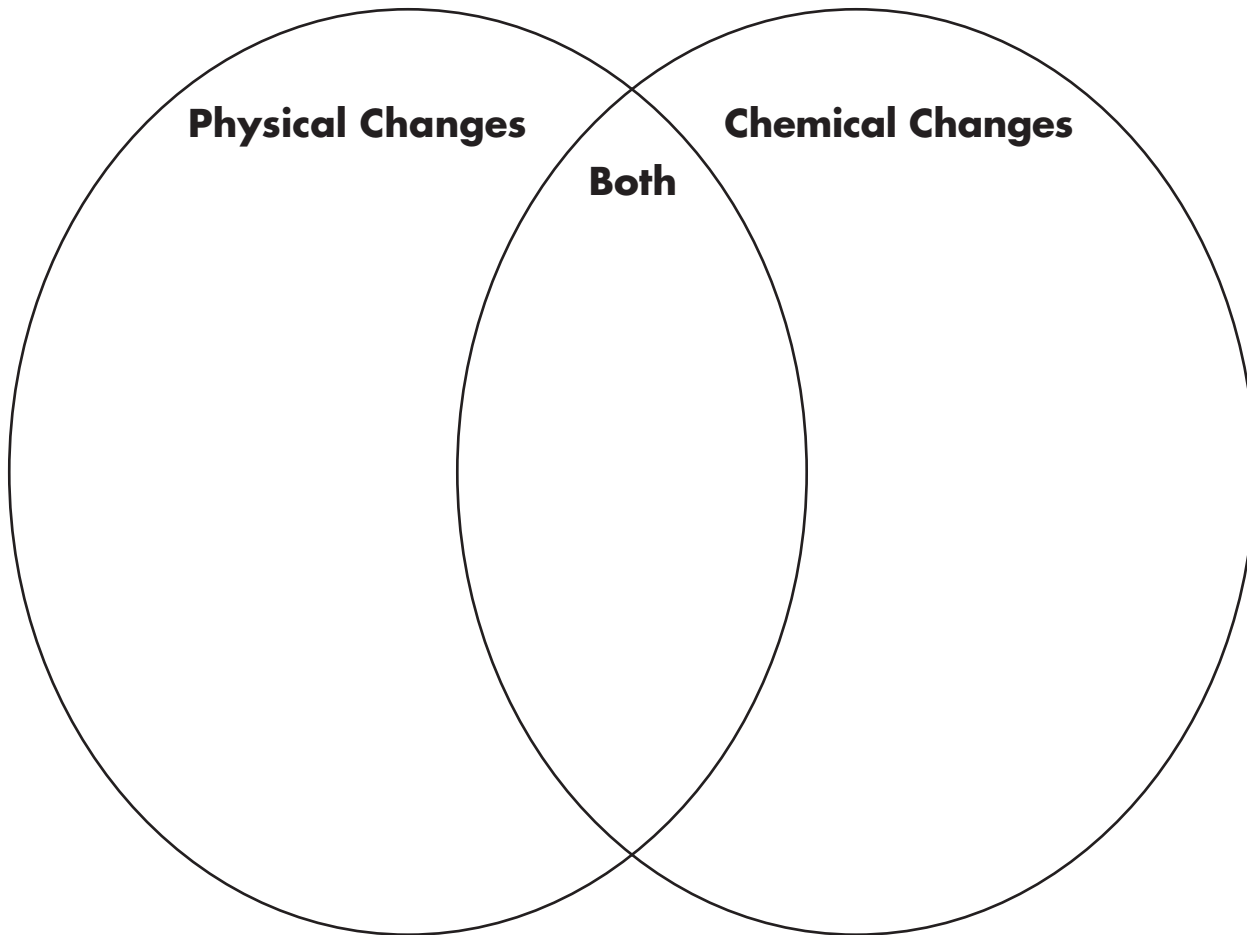


Name \_\_\_\_\_

## What are physical and chemical changes?

Complete the Venn diagram. Tell how physical changes and chemical changes are alike and different.



Name one example of a physical change and one example of a chemical change.

1. Physical Change \_\_\_\_\_

\_\_\_\_\_

2. Chemical Change \_\_\_\_\_

\_\_\_\_\_

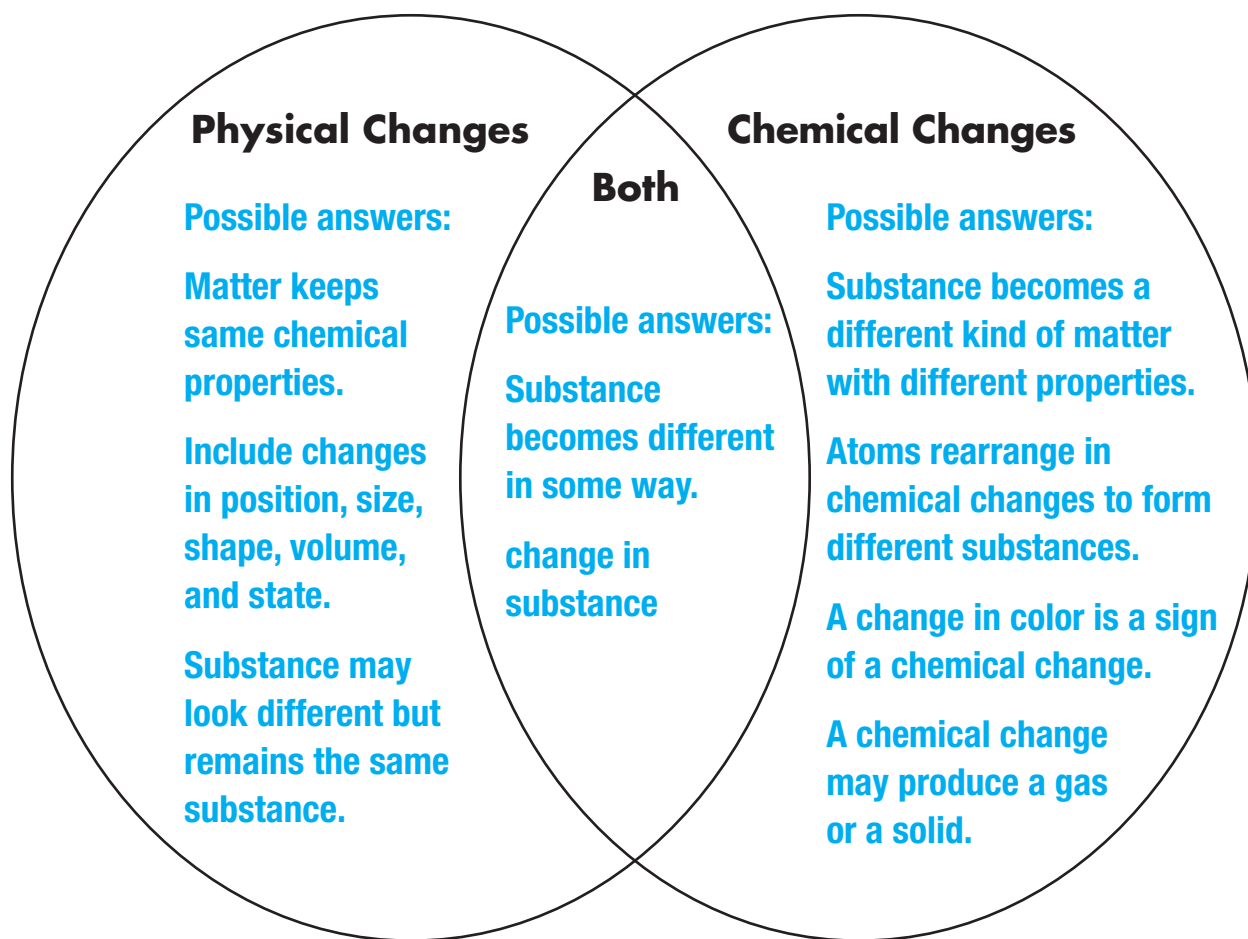


**Notes for Home:** Your child compared and contrasted physical changes and chemical changes. Ask your child to show you an example of a physical change.

Name \_\_\_\_\_

## What are physical and chemical changes?

Complete the Venn diagram. Tell how physical changes and chemical changes are alike and different.



Name one example of a physical change and one example of a chemical change.

- Physical Change Possible answer: sheet of paper torn in half
- Chemical Change Possible answer: a burning wick and oxygen becoming ash, carbon dioxide, and water vapor



**Notes for Home:** Your child compared and contrasted physical changes and chemical changes. Ask your child to show you an example of a physical change.

Name \_\_\_\_\_

Use with pages 48–53.

## How does matter change state?

Identify the properties as those of a solid, liquid, or gas.

1. It has a definite volume but not its own shape. \_\_\_\_\_
2. Its particles are very far apart. It does not have its own shape or volume. \_\_\_\_\_
3. It has its own shape and its own volume. \_\_\_\_\_

Identify the change in state of matter that results from the following physical changes.

Physical Change	State of Matter → State of Matter
Freezing	→
Melting	→
Evaporation	→
Condensation	→
Sublimation	→



**Notes for Home:** Your child identified the changes of state that result from specific physical changes. Ask your child to give examples to illustrate each kind of physical change in the chart.

## How does matter change state?

Identify the properties as those of a solid, liquid, or gas.

1. It has a definite volume but not its own shape. liquid
2. Its particles are very far apart. It does not have its own shape or volume. gas
3. It has its own shape and its own volume. solid

Identify the change in state of matter that results from the following physical changes.

Physical Change	State of Matter → State of Matter
Freezing	liquid → solid
Melting	solid → liquid
Evaporation	liquid → gas
Condensation	gas → liquid
Sublimation	solid → gas



**Notes for Home:** Your child identified the changes of state that result from specific physical changes. Ask your child to give examples to illustrate each kind of physical change in the chart.

Name \_\_\_\_\_

## What are some kinds of chemical reactions?

1. Label the reactants and the product in the following chemical equation.



\_\_\_\_\_

2. Explain the law of conservation of matter.

 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3. Name and describe three types of chemical reactions and give an example of each.

Chemical Reactions		
Kind of Reaction	Description	Example



**Notes for Home:** Your child identified chemical reactions. Help your child show a combination reaction by allowing steel wool in a soap pad to rust in a cup of water.

Name \_\_\_\_\_

## What are some kinds of chemical reactions?

1. Label the reactants and the product in the following chemical equation.


reactants
product

2. Explain the law of conservation of matter.

**Matter is not created or destroyed in a chemical reaction. The total mass**

**of the reactants is equal to the total mass of the products.**

3. Name and describe three types of chemical reactions and give an example of each.

Chemical Reactions		
Kind of Reaction	Description	Example
decomposition	Compounds split apart to form smaller compounds or elements.	Electricity causing water to break into hydrogen and oxygen gases
combination	Elements or compounds come together to form new compounds.	Iron and sulfur combining to form iron sulfide
replacement	One or more compounds split apart and switch places.	Burning of candle in which hydrogen and carbon in the wax and oxygen gas molecules separate and form new compounds of carbon dioxide and water



**Notes for Home:** Your child identified chemical reactions. Help your child show a combination reaction by allowing steel wool in a soap pad to rust in a cup of water.

Name \_\_\_\_\_

Use with pages 60–63.

## How are chemical properties used?

Summarize the information given for each part of the lesson.

### Separating Mixtures

### Separating Metals from Ores

### Separating Solutions

### Identifying Substances



**Notes for Home:** Your child summarized each section of the lesson to identify ways that chemical properties are used. Ask your child to explain each use.

## How are chemical properties used?

Summarize the information given for each part of the lesson.

### Separating Mixtures

**Possible answer:** Some mixtures cannot easily be separated by physical means. Chemical properties may be used to separate such substances. For example, vinegar can be used to separate limestone, which dissolves in vinegar, from fossils.

### Separating Metals from Ores

**Possible answer:** Ores are rocks that contain metal. Chemical properties can be used to separate the metal from other substances in the rock. For example, iron is separated from ore by heating it with carbon. Oxygen in the ore combines with the carbon. The chemical reaction produces iron and carbon dioxide.

### Separating Solutions

**Possible answer:** Chemical properties can be used to separate the elements in solutions. A solution of water, lead, and other materials can be poured into a solution that contains iodine. The lead and iodine combine to form lead iodide. The lead iodide can be filtered from the liquid to remove the lead.

### Identifying Substances

**Possible answer:** Both physical and chemical properties can be used to identify substances. Their chemical properties help identify substances as acids or bases. Strong acidic substances turn universal indicator paper red; strong bases turn it violet. Weaker acids and bases turn it other colors. Flame tests are used to identify some substances. The color of the flame helps identify the material.



**Notes for Home:** Your child summarized each section of the lesson to identify ways that chemical properties are used. Ask your child to explain each use.